

CLAIMS

1. A method of treating of pulp, which in a dewatering step is dewatered to a fibre concentration of at least 20% and which in a later bleaching step is bleached in a reaction vessel (6) through reaction with ozone gas, characterised in that

- after the dewatering step and before the bleaching step the pulp is shredded in a closed pulp shredding vessel (16),
- the shredded pulp is transported without compression continuously out of the pulp shredding vessel through an outlet pipe (22) therefrom, so that the outlet pipe is kept completely filled with passing pulp,
- from the outlet pipe of the pulp shredding vessel the shredded pulp is directly transported to the reactor vessel (6) through a gas-tight conduit (28) which is gas sealed from the surroundings, the interior of the conduit communicating with the interior of the outlet pipe and with the interior of the reaction vessel, and
- the gas pressure (P1) in the pulp shredding vessel is kept higher than the gas pressure (P2) in the reaction vessel.

2. A method according to claim 1, characterised in that the pressure difference between the gas pressure (P1) in the pulp shredding vessel (16) and the gas pressure (P2) in the reaction vessel (6) is regulated towards a predetermined value.

3. A method according to claim 2, characterised in that the gas pressures (P1, P2) in the pulp shredding vessel (16) and the reaction vessel (6) are kept below the surrounding atmospheric pressure.

4. A method according to any of claims 1-3, ~~characterised in~~ that the shredded pulp is transported by gravity in the gas-tight conduit (28).

5 5. A method according to any of claims 1-4, ~~characterised in~~ that in the pulp shredding vessel (16) the pulp is shredded by a transport screw (18) with at least one toothed transport thread (26), the transport screw also providing a transport of the shredded pulp through the outlet pipe (22) of the pulp shredding vessel.

10 6. A system for treatment of pulp, comprising a dewatering device (2) for dewatering the pulp to a fibre concentration of at least 20%, and a reaction vessel (6) for bleaching the dewatered pulp through reaction with ozone gas, ~~characterised~~ by a pulp shredding device (4) for shredding the dewatered pulp, which pulp shredding device comprises a closed pulp shredding vessel (16), an outlet pipe (22) from the pulp shredding vessel, and a transport means (18) for continuous transport of the shredded pulp without compressing the pulp out of the pulp shredding vessel via the outlet pipe, so that the latter is kept filled with passing pulp, a conduit (28) which is gas sealed from the surroundings and connects the outlet pipe of the pulp shredding vessel gas-tightly to the reaction vessel, so that the interior of the outlet pipe directly communicates with the interior of the reaction vessel through the interior of the conduit, and a pressure regulation device (38, 40, 42, 44, 48) for maintaining a gas pressure (P1) in the pulp shredding vessel which is higher than the gas pressure (P2) in the reaction vessel.

20 7. A system for treatment of pulp according to claim 6, ~~characterised in that~~ the transport means comprises a transport screw (18) extending in the pulp shredding vessel

(16) and provided with at least one toothed/transport thread (26) for shredding the pulp.

8. A system for treatment of pulp according to claim 7,
5 characterised in that the transport screw (18) also extends in the outlet pipe (22) of the pulp shredding vessel (16).

9. A system for treatment of pulp according to any of claims 6-8, characterised in that the pressure regulation device 10 (38, 40, 42, 44, 48) regulates the pressure difference between the gas pressure (P1) in the pulp shredding vessel (16) and the gas pressure (P2) in the reaction vessel (6) towards a predetermined value.

15 10. A system for treatment of pulp according to claim 9, characterised in that the pressure regulation device (38, 40, 42, 44, 48) comprises a first fan (44) with controllable capacity arranged in a gas outlet (46) in the pulp shredding vessel (16) for evacuation of gas therefrom, a second fan 20 (48) with controllable capacity arranged in a gas outlet (36) in the reaction vessel (6) for evacuation of gas therefrom, a first pressure sensor (40) for sensing the gas pressure (P1) in the pulp shredding vessel (16), a second pressure sensor (42) for sensing the gas pressure (P2) in the reaction vessel 25 (6), and a regulation unit (38) which in response to the first and second pressure sensors, respectively, regulates the capacity of the first and second fans, respectively.

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